



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,183	10/23/2003	Minoru Masuda	501/41430/96	8433
279	7590	05/16/2007	EXAMINER	
TREXLER, BUSHNELL, GIANGIORGI, BLACKSTONE & MARR, LTD. 105 WEST ADAMS STREET SUITE 3600 CHICAGO, IL 60603			JOYNER, KEVIN	
			ART UNIT	PAPER NUMBER
			1744	
			MAIL DATE	DELIVERY MODE
			05/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/692,183	MASUDA ET AL.
	Examiner	Art Unit
	Kevin C. Joyner	1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 05 March 2007.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-11 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) _____ is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

FINAL ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 2 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view Takeuchi (U.S. Patent No. 5,999779).

Concerning claim 1, Masuda discloses a rotary belt sterilizer comprising: a drive roller (referenced as a pulley (40)) arranged to rotate in synchronization with the sterilized rotary belt (as disclosed in paragraph 22); an applicator roller (referenced as a cleaning member (6) in drawing 1), configured to apply a sterilizing solution to said sterilized rotary belt (paragraph 21); a switching device for the applicator roller (the 1V pulley (38), 2V pulley (40), V belt (42), 1st-6th moderation gears (labeled 46, 48, 50, 52, 54, and 55 respectively), and the revolving shaft as disclosed in paragraph 22, is a switching device), linked to the drive roller and arranged to contact said applicator roller with said sterilized rotary belt (as disclosed in paragraph 21), and; a supply tray (referenced as a disinfection cistern (22)) for the sterilizing solution that is capable of supplying said sterilizing solution to said applicator roller; and a sterilizing solution supplier (the combination of; the worm (56), worm wheel (58), shaft (64A), core side of the worm wheel (as shown in drawing 8 and disclosed in paragraph 23), antibacterial feed pump (30), pin member (67), and antibacterial tank (34), is a sterilizing solution

supplier), that is capable of supplying said sterilizing solution to said supply tray from a storage tank for the sterilizing solution per pre-determined rotations of said drive roller.

Masuda does not appear to disclose a drive roller arranged to contact a rotary belt when the rotary belt is rotating, or a switching device arranged to cause the applicator roller to move into contact with said rotary belt while the drive roller is in contact with the rotary belt during rotations of said drive roller and separate said applicator roller from said sterilized rotary belt during halts of said drive roller. It is considered well known in the mechanical arts (in particular the coating art) to provide a coating roller with the capability to move from a resting position to an operating position in order to preserve the material to be coated when not in use. Takeuchi discloses one example of an apparatus for applying/coating an agent to a rotary belt (44). The apparatus includes a drive roller (45a) arranged to contact a rotary belt (44) when the belt is rotating; and a switching device arranged to cause the applicator roller to move into contact with said rotary belt while the drive roller is in contact with the rotary belt during rotations of said drive roller and separate said applicator roller from said sterilized rotary belt during halts of said drive roller in order to reduce the amount of liquid on the belt when it is not used to eliminate dust and other impurities from contaminating the belt (column 4, lines 25-52). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the rotary belt sterilizer of Masuda to include a switching device arranged to cause the applicator roller to move into contact with said rotary belt while the drive roller is in contact with the rotary belt during rotations of said drive roller and separate said applicator roller from

Art Unit: 1744

said sterilize rotary belt during halts of said drive roller in order to reduce the amount of liquid on the belt when it is not used to eliminate dust and other impurities from contaminating the belt as is considered well known in the art and further exemplified by Takeuchi.

Concerning claim 2, Masuda continues to disclose that the drive roller, applicator roller, switching device, supply tray, and sterilizing solution supplier are provided in a casing (referenced as a cleaning device body (4), and disclosed in drawings 1 and 4).

In regards to claim 7, Masuda also discloses that the sterilizing solution supplier includes: a deceleration mechanism containing a worm (56) provided on a deceleration rotary shaft (64A) and a worm wheel (58) having a flat cum mated with said worm (as broadly defined the core side of the worm wheel as shown in drawing 8 and disclosed in paragraph 23 is a flat cum); a supply pump (30) for the sterilizing solution being actuated from a guide pin (67) that impinges on said flat cum in said deceleration mechanism (as shown in drawing 8); and a storage tank (referenced as an antibacterial tank (34)), for the sterilizing solution arranged in communication with said supply pump (as shown in drawing 4 by the pipe 32).

Concerning claims 8 and 9, Masuda continues to disclose that said applicator roller (referenced as a cleaning member (6)), contacts a: throttle roller (as broadly defined, the pulley 40 is a throttle roller); and a supply roller (referenced as a antibacterial feed zone material (26)) that is partly immersed into said sterilizing solution (24) in said supply tray (as shown in drawing 4) and arranged rotatable therein (as disclosed in paragraph 21).

Concerning claim 10, Masuda also discloses that the supply pump has an inlet unidirectional valve (31), and an outlet unidirectional valve (29) in a flow direction of said sterilizing solution (as disclosed in paragraph 24).

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view of and Takeuchi (U.S. Patent No. 5,999779) as applied to claims 1, 2 and 7-10 above, and further in view of Jones (U.S. Patent No. 2,724,493).

Masuda in view of Takeuchi is relied upon as set forth in reference to claims 1, 2 and 7-10 above. Masuda in view of Takeuchi does not appear to disclose that said drive roller is one of a pair of left and right drive rollers normally contacted with said rotary belt. Jones discloses a conveyor belt cleaning arrangement that includes a drive roll that contacts the conveyor belt. The patent further discloses that the drive roll is a pair of left and right drive rolls (as shown in Figure 2, the right drive roll is labeled numeral 12, while the left drive roll is not numbered), that contact the rotary belt (11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Masuda in view of Takeuchi to include a pair of left and right drive rolls that contact the rotary belt in order to support the outer portions of the belt as exemplified by Jones.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view Takeuchi (U.S. Patent No. 5,999779) as applied to claims 1, 2 and 7-10 above, and further in view of Varner (U.S. Patent No. 3,604,037).

Masuda in view of Takeuchi is relied upon as set forth in reference to claims 1, 2 and 7-10 above. As shown in Figures 6A & 6B, Takeuchi discloses a switching device

Art Unit: 1744

comprising a gear provided on a deceleration rotary shaft arranged to rotate/halt in response to rotations/halts of one of said drive rollers; a lifting rod for the applicator roller arranged to lift said applicator roller up and down in response to rotations/halts of said gear. More specifically, the applicator roller (42) is provided with a deceleration rotary shaft (not numbered) which is rotated by a gear (49). The lifting rod (47) is a cam that is arranged to lift the applicator roller up and down in response to rotations/halts of said gear as disclosed in column 4, lines 25-45.

Masuda in view of Takeuchi does not appear to disclose that the switching device includes: an eccentric gear arranged to detachably mate with said gear; a lifting rod for the applicator arranged to lift said applicator roller up and down in response to rotations/halts of said eccentric gear; a flywheel arranged to rotate/halt in response to rotations/halts of the other of said drive rollers; and an engaging unit for the lifting rod arranged to engage with/disengage from said lifting rod in response to rotations/halts of said flywheel when said applicator roller is lifted up. However, it is known in the art to provide switching devices that include an eccentric gear arranged to detachably mate with said gear; a lifting rod for the applicator arranged to lift said applicator roller up and down in response to rotations/halts of said eccentric gear; a flywheel arranged to rotate/halt in response to rotations/halts of the other of said drive rollers; and an engaging unit for the lifting rod arranged to engage with/disengage from said lifting rod in response to rotations/halts of said flywheel when said applicator roller is lifted up. Varner discloses one example of a switching device containing: a gear (referenced as a worm gear 102) provided on a deceleration rotary shaft (103) arranged to rotate/halt in

Art Unit: 1744

response to rotations/halts (as disclosed in column 5, lines 32-38) of one of said drive rollers (40); an eccentric gear (100) arranged to detachably mate with said gear (as shown in Figure 10); a lifting rod (74) for the applicator roller arranged to lift said applicator roller up and down (as disclosed in column 4, lines 24-31) in response to rotations/halts of said eccentric gear (100), (As disclosed in column 5 lines 31-37, the drive wheels cause the eccentric gear to rotate/halt in order to automatically regulate the operations performed by the rest of the apparatus. Column 5 lines 40-47 further states that the gear is connected to a footage dial which causes the lifting rod to lift the applicator roller up and down as stated in column 6, paragraph 4. Once the gear turns, it allows the footage dial to act on a predetermined setting and cause the lifting rod to lift the applicator up or down. Therefore, the lifting rod lifts the applicator roller up and down in response to the halts of the eccentric gear.); a flywheel (as broadly defined, the pivotal bracket plate 62' is a flywheel) arranged to rotate/halt in response to rotations/halts to said drive rollers (The flywheel is contacted with the lifting rod, which responds to the drive rollers as disclosed above.); an engaging unit (as shown in figure 7) for the lifting rod that is capable of engaging with/disengaging from said lifting rod in response to rotations/halts of said flywheel when said applicator roller is lifted up (as disclosed in column 4, paragraph 2). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the switching device in the apparatus of Masuda in view of Takeuchi with a known device including an eccentric gear arranged to detachably mate with said gear; a lifting rod for the applicator arranged to lift said applicator roller up and down in response to rotations/halts of said eccentric

Art Unit: 1744

gear; a flywheel arranged to rotate/halt in response to rotations/halts of the other of said drive rollers; and an engaging unit for the lifting rod arranged to engage with/disengage from said lifting rod in response to rotations/halts of said flywheel when said applicator roller is lifted up, as such is considered a known equivalent alternative in the art for moving an applicator roller to contact a surface during rotations of a drive roller and separating the applicator roller during halts of the drive roller as exemplified by Varner. Only the expected results would be obtained.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view of Takeuchi (U.S. Patent No. 5,999779) and Varner (U.S. Patent No. 3,604,037) as applied to claims 1, 2, 4 and 7-10 above, and further in view of Farr (U.S. Patent No. 4,633,981).

Masuda in view of Takeuchi and Varner is set forth in reference to claims 1, 2, 4 and 7-10 above. Masuda in view of Takeuchi and Varner further discloses that the engaging unit includes:

An actuation pin (referenced as a plunger (71)) capable of moving axially on the axial center of a rotary shaft of a solenoid (The solenoid (70), which includes a rotary shaft, is used to move the actuation pin in an axial position.); an axial movement converter mechanism (The combination of the pivotal lever, (not numbered) connecting the plunger and the grooved ring, and the spring is an axial movement converter mechanism.), configured to move said actuation pin axially in response to movement of said weight toward the perimeter (column 4, lines 27-35); a vertical movement converter mechanism (A combination of the second rocker arm (76) and the fixed rotatable shaft

(75) is a vertical movement converter mechanism.), configured to convert axial movement of said actuation pin into vertical movement (column 4, lines 33-37); and an engagement hook (referenced as a cam (77)), configured to complete preparation of engagement with said lifting rod when said vertical movement converter mechanism provides down pressure an disengage from said lifting rod when said vertical movement converter mechanism releases pressure (column 4, lines 30-37). Masuda in view of Takeuchi and Varner does not appear to disclose that the engaging unit includes; a weight movable toward the perimeter in response to a centrifugal force caused by rotations of said flywheel. It is generally known to use a flywheel with weights to move other mechanisms in an axial direction. In one example, Farr discloses a rotary flywheel skid sensor apparatus that includes a weight (30) movable toward the perimeter in response to a centrifugal force caused by rotations of a flywheel (column 3, lines 41-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Masuda in view of Takeuchi and Varner to include a weight movable to the perimeter in response to a centrifugal force caused by rotations of a flywheel in order to move a mechanism axially as exemplified by Farr.

Concerning claim 6, Masuda in view of Takeuchi and Varner further discloses that said axial movement converter mechanism includes: a pivotal lever (The pivotal lever is not numbered but is shown in Figure 6 between the spring and the plunger.) having a lever end and capable of pivoting along the axis of said flywheel in response to movement of said weight toward the perimeter to press said lever end against an end of

said actuation pin; and a spring means (72) capable of normally springing said actuation pin to release pressure applied on said engagement hook.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda (JPO 2002205890A) in view of and Takeuchi (U.S. Patent No. 3,604,037) as applied to claims 1, 2 and 7-10 above, and further in view of Veloz (U.S. Patent No. 3,550,782).

Masuda in view of Takeuchi is relied upon as set forth in reference to claims 1, 2 and 7-10 above. Masuda further discloses that the storage tank (34) has a unidirectional valve at an aperture thereof that is capable of attaching to another, and that said valve is opened on attachment and closed on detachment to another item (as disclosed at the bottom of paragraph 21). Masuda in view of Takeuchi does not appear to disclose that the storage tank is detachably attached to said casing and that said casing has a unidirectional valve that is capable of attaching to another. Veloz discloses a water sterilization apparatus that includes a storage tank and a casing. The patent further states that the storage tank (18) is detachably attached to said casing (referenced as a housing 24), and that said casing has a unidirectional valve (Although it is not specifically stated, it is inherent to one of ordinary skill in the art that a unidirectional valve is a commonly used valve in order to eliminate any possible leaking.) that is capable of attaching to another (as shown in Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Masuda in view of Takeuchi to include a storage tank that is detachably attached to said casing and that said casing has valve that is capable of

attaching to another in order to detach the storage tank from the casing and refill the tank with a sterilizing solution as shown by Veloz.

Response to Arguments

6. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's principle arguments are:

(a) The Examiner also rejected the claims citing several prior art references, namely, Japanese Patent Publication No. 2005-205890 (Masuda) and United States Patent Nos. 3,604,037 (Varner), 2,724,493 (Jones), 4,633,981 (Farr) and 3,550,782 (Veloz). Applicant has amended independent claim 1 to further distinguish the present invention from that which is disclosed in the prior art of record. As such, it is respectfully submitted that claim 1 and those claims which depend therefrom are allowable.

Claim 1 now specifically claims a rotary belt sterilizer which includes a drive roller which is arranged to contact a sterilized rotary belt when the sterilized rotary belt is rotating and therefore rotate in synchronization with the sterilized rotary belt, and an applicator roller configured to move into contact with the sterilized rotary belt and apply a sterilizing solution to the sterilized rotary belt. Claim 1 also specifically claims a switching device for the applicator roller, where the switching device is linked to the drive roller and arranged to cause the applicator roller to move into contact with the sterilized rotary belt while the drive roller is in contact with the sterilized rotary belt, during rotations of the

drive roller and separate the applicator roller from the sterilized rotary belt during halts of the drive roller.

In contrast, Masuda discloses always keeping cleaning member 6 in contact with the belt 2. As such, even if the cleaning member 6 can be said to be a drive roller (which is arranged to contact a sterilized rotary belt when the sterilized rotary belt is rotating)" according to claim 1 of the present invention, Masuda fails to teach an applicator roller configured to move into contact with a sterilized rotary belt, or a switching device for the applicator roller, where the switching device is linked to the cleaning member 6 and arranged to cause the applicator roller to move into contact with a sterilized rotary belt while the cleaning member 6 is in contact with the sterilized rotary belt, during rotations of the cleaning member 6, and separate the applicator roller from the sterilized rotary belt during halts of the cleaning member 6.

As such, Masuda fails to disclose or suggest what is now being specifically claimed in claim 1.

The applicant's amendments have necessitated new grounds for rejection concerning this limitation.

(b) Applicant respectfully submits that the Varner reference is non-analogous as it relates to the cleaning of a bowling lane. In In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992) the patent involved an improvement in a metal hose clamp having a preassembly hook that was used to maintain the preassembly condition of the clamp and that was disengaged automatically when the clamp was tightened. The Examiner cited a combination of two references to support the rejection of obviousness. The first

reference related to a metal hose clamp without the hook, and the second described a plastic hook and eye fastener used in garments. The Federal Circuit held that the second reference was nonanalogous art and therefore reversed the obviousness rejection. Specifically, the court stated:

It has not been shown that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments. The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself...Oetiker's invention is simple. Simplicity is not inimical to patentability.

In the present case, the Masuda reference relates to cleaning a handrail belt, while the Varner reference relates to cleaning a bowling lane. Applicant respectfully submits that, consistent with In re Oetiker, in the present case, it cannot be said that a person of ordinary skill, seeking to solve a problem of engaging and disengaging an application roller with a sterilized rotary belt, would reasonably be expected or motivated to look to bowling lane cleaning devices. As such, Applicant respectfully submits that Varner is non-analogous art, and that it is improper to combine Masuda and Varner. As such, Applicant respectfully submits that the rejection be withdrawn.

Nevertheless, even if Varner is analogous, Applicant respectfully submits that a combination of Masuda with Varner does not provide the present invention. Neither reference discloses an applicator roller configured to move into contact with the sterilized rotary belt and apply a sterilizing solution to the sterilized rotary belt. Also, neither reference discloses a switching device for the applicator roller, where the switching device is linked to the drive roller and arranged to cause the applicator roller to move into contact with the sterilized rotary belt while the drive roller is in contact with the sterilized rotary belt, during rotations of the drive roller, and separate the applicator roller from the sterilized rotary belt during halts of the drive roller.

Applicant respectfully submits that none of the cited references, either alone or in combination, disclose or suggest what is now being claimed in claim 1 of the present application. Therefore, Applicant respectfully submits that the claim rejections should be withdrawn, and that claim 1 and those claims which depend therefrom are allowable.

The applicant's amendments have necessitated new grounds of rejection.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin C. Joyner whose telephone number is (571) 272-2709. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on (571) 272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



GLADYS J. CORCORAN
SUPERVISORY PATENT EXAMINER

KCJ